Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of	)	
	)	
Implementation of Section 304 of the Telecommunications Act of 1996	)	CS Docket No. 97-80
	)	
	)	
Commercial Availability of Navigation Devices	)	
	)	
	)	
Compatibility Between Cable Systems and Consumer Electronics Equipment	)	PP Docket No. 00-67

COMMENTS OF INTEL CORPORATION ON THIRD FURTHER NOTICE OF PROPOSED RULE MAKING

Intel Corporation ("Intel") submits these comments in response to the Commission's Third Further Notice of Proposed Rule Making ("FNPRM"). Intel applauds the Commission's commitment to realization of a competitive retail market for interactive navigation devices. As an active participant in the Cable Plug and Play proceedings over the years, we agree with Commissioner Copps that the time for progress is now, and join him in his expression of appreciation to Chairman Martin for moving this important agenda forward as the DTV transition is literally upon us. Intel regrets that there is not a joint CEA-NCTA proposal on the table at this time, but hopes that finding common ground is still not beyond our collective reach. In any event, Intel appreciates the difficulty of the task before the Commission and reiterates our commitment to help move this important agenda forward in the interests of the affected industries and most importantly consumers.

EXECUTIVE SUMMARY

There are currently only two substantive proposals before the Commission as of this filing, one offered by NCTA in November 2005 ("NCTA Proposal") and one offered by CEA companies in November 2006 ("CEA Proposal").[1] The CEA Proposal and the NCTA Proposal contain one common element, which is support for Cable's Open Cable Application Platform ("OCAP"). The CEA Proposal sets out a feasible technical approach to enable both OCAP and an OCAP alternative in cable head ends and client devices, while the NCTA Proposal contains a regulatory deployment schedule for head ends but does not contain a regulatory Cable commitment to deploy OCAP client devices. Although OCAP is an important part of both proposals, neither the CEA Proposal nor the NCTA Proposal contemplates OCAP as the only technology in retail and Cable provisioned devices. From a business perspective Intel supports OCAP and would like to see ubiquitous deployment of the OCAP client devices to coincide with NCTA's stated cable head end deployment schedule.[2] From a policy perspective Intel supports an alternative to stimulate and enable competition, innovation and consumer choice; an OCAP alternative enables competition with Cable offerings absent a regulatory Cable obligation to support OCAP in *all* of its own devices on a roll-out path equal to its commitment to provide head end OCAP support. Cable has not (as of this filing) put

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[1] Intel is a signatory to the CEA Proposal.

[2] Intel recently announced that it would support the Open Cable Platform in future consumer electronics (CE) system-on-a-chip (SoC) products.

any OCAP alternatives forward for public comment detailed enough for meaningful consideration at this time. Intel invites alternative proposals, but believes the Commission should *not* delay moving forward with its effort to bring interactivity to retail devices as soon as possible.

One of the other important issues addressed in both the CEA Proposal and the NCTA Proposal concerns home networking and the use of protected digital outputs to enhance the consumer experience. Intel has long advocated CableLabs' approval of Digital Transmission Content Protection over Internet Protocol ("DTCP IP") and other technologies to accomplish that goal. We are very pleased that CableLabs' has approved DTCP IP as a protected output for unidirectional and bidirectional devices under DFast, CHILA, DCAS and their successor agreements, and we thank CableLabs, the cable industry, and the studios for their cooperation and efforts. We believe that this is a major step forward for the consumer and for home networking generally, and we encourage the Cable industry, device makers and the Commission to consider requiring an IP interface for home networking instead of the current IEEE 1394 requirement which has delivered very little value for consumers.

INTRODUCTION

Throughout its participation in these Plug and Play proceedings and in the private industry negotiations regarding plug-and-play devices, Intel has advocated four key principles that may be useful guides to the Commission in this rule making. Intel believes that the CEA Proposal is consistent with these principles.

1. **Consumer Choice.** The specifications and license requirements for cable-compatible plug-and-play devices should be flexible enough to allow for the incorporation of plug-and-play capability in a wide range of consumer electronics and information technology devices, including traditional stand-alone televisions, cable and satellite set-top-boxes, digital video recorders, game consoles, personal computers, and other multi-function devices. Neither the specifications themselves nor the robustness, compliance, and certification rules that govern licensing of necessary technology should preclude any particular class or type of machine from participating in the market for plug-and-play devices. Indeed, a truly competitive retail market depends on device manufacturers' freedom to innovate and consumers' freedom of choice. In this context, retail device makers should be able offer a variety of navigation devices to compete not only with other retail offerings, but also with the devices that Cable is able to offer...

2. The CEA Proposal squarely addresses consumer choice in a competitive market by seeking to enable a wide range of interactive devices in a standards-based form factor neutral way, from OCAP-based advanced interactive devices to non-OCAP-based interactive devices. Absent a Cable regulatory commitment to support OCAP in all of its own devices, alternatives are needed to enable competition. The CEA Proposal also contains mechanisms to keep unidirectional products functioning and relevant in the marketplace by adding support for switched digital. These approaches are technically feasible and will enable broad categories of devices with a wide range of product differentiation.

They will provide manufacturers the ability to not only complete with each other but also compete more with Cable's own navigation devices. The ability for a retail device to compete with a cable device with respect to price and functionality is critical.

3. Intel believes that this FNPRM will include much debate about the viability of OCAP for retail devices, particularly absent a Cable regulatory commitment to support OCAP in all of its own devices. We acknowledge that while there are challenges that still need addressing to make OCAP successful on multi-function devices and in retail generally[3], Intel strongly supports OCAP as an important technology for the retail market and for Cable provisioned devices. OCAP is *the* common technology element in both the CEA and NCTA proposals, and therefore one that Intel believes the Commission will find appropriate as part of the solution it adopts. Intel is committed to working with its CE/IT and Cable colleagues to make OCAP work.

4. Intel recognizes that neither the CEA Proposal nor the NCTA Proposal "bet the whole farm" on a single approach. For example, the NCTA Proposal acknowledges that OCAP alone is not enough by leaving broad discretion for the Cable industry to pick and choose non-OCAP approaches in its own device offerings. From a competition perspective, Intel believes that without a Cable regulatory obligation to deploy a standard version of OCAP in *all* Cable provisioned devices, an

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[3] Important issues include application and device testing and certification, change control, resource management in multifunction devices, etc. See, e.g., CEA Proposal Exhibit B.

OCAP alternative is necessary. From a public policy perspective, Intel believes that an alternative is desirable to stimulate competition, innovation and consumer choice.

Cable has raised many concerns in the past about its ability to control the way that its interactive services are displayed to consumers. We are sensitive to Cable's concern that it not lose the business benefits of its interactive services. The CEA Proposal also recognizes that concern by (i) adopting OCAP for all advanced interactive services, and (ii) with respect to the OCAP alternative, recognizing that "metadata could be included to define the cable experience on the competitive device."[4] We believe that this metadata, with associated compliance rules, is one way to address Cable's concern. There may be other paths to address this concern while enabling retail products, but they are not before the Commission as detailed proposals as of this filing. For example, NCTA suggested in its June 2007 filing that an enhanced security device might be architected that could provide a common platform/interface for a variety of MVPD services (not only Cable), but there are not enough details to make specific comments on.

5. **Consumer Control.** As technological advances provide consumers with new multi-function, peripheral and portable devices, and innovative ways to link those devices, consumers need the ability to configure and control their own home-networks and associated devices in the manner that best suits their individual needs. Portability and flexibility are increasingly critical to meet consumer

[4] CEA Proposal at page 7.

expectations, and consumer control is central. Enabling and preserving consumer control requires a conditional access technology licensing scheme that designates a reasonable number of approved protected output technologies with sufficient diversity to ensure that the many potentially interoperable home video devices can be seamlessly woven into individual home networks.[5]

6. The CEA Proposal seeks to establish a non-CableLabs path to digital output approvals and to establish specific guidelines based on theft of service and harm to network to guide that approval process, We believe that CableLabs' recent approval of DTCP IP as an approved output for both unidirectional and bidirectional devices represents a major step forward for device makers, cable operators and consumers, and represents a significant step forward in addressing the issues raised in the CEA Proposal.

7. Intel has long supported objective standards for output approvals, and we encourage objective standards to the extent possible on a forward looking basis. Intel believes that the Commission should require an approach with clear objective approval criteria based on harm to network and theft of service, with a speedy escalation and dispute resolution process characterized by cross-industry participation and/or neutral third party appeal.

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[5] A number of specifications for secure outputs that perform these tasks already have been developed and adopted by various industry groups, including the Digital Transmission Content Protection ("DTCP", which has been mapped to several interfaces, including, e.g., Internet Protocol ("DTCP IP") and IEEE 1394 ("DTCP 1394")"), High-Bandwidth Digital Content Protection ("HDCP"), and Windows Media Digital Rights Management ("Windows Media DRM").

8. IP Based Home Networking. Now that DTCP IP has been broadly approved, we believe the time is ripe for the FCC, the Cable industry and device makers to consider replacing the current IEEE 1394 set top box output requirement with an IP interface protected by DTCP. Intel believes that although there are likely to be a variety of home networking approaches, Internet Protocol will be the home networking transport of choice for most consumers. In this context, we support close cooperation with and reference to DLNA specifications and guidelines, where DTCP IP is a mandatory content protection technology in DLNA's voluntary scheme.

9. Selectable Output Control Selectable Output Control (SOC) is an important consumer interest contemplated in both the CEA Proposal and the NCTA Proposal. We believe the Commission's basic policy with respect to SOC should be to prohibit it generally, with only narrow exceptions permitted (for example) for "early window" content offerings in a new business models that depend on a fully protected digital experience after the Commission has determined through an open public process that its use in the specific circumstances would clearly be in the best interests of consumers and promote a rich digital market place In even those narrowest of circumstances, however, we do not believe that SOC should be allowed to discriminate among technologies that are able to meet the protection requirements. As a hypothetical example, if the Commission permits a day and date theatrical pay per view offering to be displayed at full resolution over "protected digital outputs only", the restriction should not discriminate among, e.g.

HDCP and DTCP, as long as they are both capable of providing the required "digital only" protection. Similarly, SOC should not be used to shut off a down stream technology simply because that technology does not fully support a particular business model when the technology does support a more restrictive alternative. As another hypothetical example, a technology that does not support a particular rental model (e.g., keeping an early release copy never offering for three days) should not be prohibited from doing what it can do consistent with the rights conveyed (for example, streaming only if that is the next most restrictive capability of the technology). .

10. **Common Reliance.** Creating a competitive market for navigation devices that actually will serve consumers' needs and desires requires "common reliance" on the same technology and security standards by both retail manufacturers and cable providers. This requirement is fundamental. As the Commission has recognized, the use of common reliance standards plays a key role in fostering a competitive market in navigation devices because it places all manufacturers and devices on a level playing field with those produced by the cable industry.[6] Intel agrees with this assessment and encourages the Commission to continue insisting that common reliance standards be a part of any regulations adopted by the Commission.

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[6] Implementation of Section 304 of the Telecommunications Act of 1996; Commercial Availability of Navigation Devices, *Second Report and Order*, 20 FCC Rcd 6794, ¶ 27 (2005).

11. The CEA Proposal recognizes that common reliance requirements are necessary for OCAP support, but in the context of a proposal that has an OCAP alternative, does not insist that Cable support OCAP in every single cable device. With respect to OCAP-based advanced interactive devices, for example, the CEA Proposal asks the Commission only require a "substantial percentage" of cable devices to support the designated OCAP standard. The CEA Proposal therefore acknowledges that some of the common reliance objectives might be accomplished while still providing Cable with flexibility to experiment, innovate, or even simply opt for the least expensive alternative available for some devices. This makes sense in light of the fact that the CEA Proposal offers an OCAP alternative. Absent an OCAP alternative, however, Intel believes that a competitive retail market requires a regulatory cable commitment to deploy OCAP in all of its devices on a time line equal to its regulatory head end deployment schedule. A retail device must be able to compete from both a price and functionality perspective, including with Cable provisioned devices. The NCTA proposal, however, has no regulatory common reliance component beyond head end support, potentially leading to a repeat of the history of challenges associated with unidirectional device support. We encourage the Cable industry to support a meaningful OCAP alternative like that put forward in the CEA Proposal to enable a competitive and a level playing field absent a regulatory requirement that it deploy OCAP in all of its devices on a time line commensurate with the OCAP head-end deployments set out in the NCTA and CEA Proposals.

12. **Software-Based Downloadable Conditional Access.** Intel has advocated, and continues to support, the move to a software-based downloadable conditional access system based on common reliance standards. This is the best way to provide consumers with choice and control without compromising cable operators' legitimate interest in network integrity and content providers' reasonable concerns about content protection. To accomplish these goals, however, a downloadable conditional access system should consist chiefly of a software application that can be downloaded onto a general purpose hardware platform. Security requirements for both the software and the hardware should be set forth as "robustness rules" that do not specify implementation details, but rather general security standards. Implementers should be free to use their own technological approaches to satisfy those robustness requirements. True downloadable security could enable multiple services to co-exist on the same basic platform. There are many examples of downloadable solutions available today that can be adapted to enable this approach, including the DRM approaches offered by Widevine, Veramatirix, Microsoft and the Open Mobile Alliance DRM 2.0. What does need to be developed to enable this, however, are robustness requirements for the basic platform (hardware and software), and defined interfaces to enable multiple downloadable solutions (or even one downloadable solution) to operate on that platform. Intel is committed to working with the Cable industry to define these platform requirements and enable its DCAS vision without the need for proprietary hardware requirements or platform definitions that have no utility beyond cable services. DCAS as proposed

today simply does not meet those requirements; rather, as set out in numerous IT industry filings on the subject, DCAS simply replaces one proprietary hardware scheme (cable cards) with another (DCAS proprietary system on a chip).

13. Downloadable security is one area that Intel strongly recommends that the Commission take an active role in both directing and over-seeing the affected industries cooperation with respect to a long term solution. The Commission should not, however, lose sight of today's pressing needs for immediate solutions in anticipation of yet to be developed platform standards. Intel is, however, committed to working with our colleagues in the CE, IT and service provider industries toward developing the robustness standards and interfaces necessary to make downloadable security on non-proprietary hardware a reality.

14. **Other MVPDs**. Intel does not believe that MVPDs in the IPTV and DBS arenas should be compelled to adopt proprietary cable technologies. It would, however, be in the best long term interests of consumers if the devices they purchase at retail were able to support more services than those offered by Cable companies alone. The best way to accomplish that goal is to focus on establishing baseline platform requirements as described in the previous paragraphs on software-based downloadable conditional access. Baseline platform requirements, including standard interfaces, can be developed to enable a multitude of conditional access services on common hardware and software platforms. The Commission should encourage all affected industries to work toward that common long term goal. In this context, Intel is committed to working with all MVPDs to find common

ground and both short and long term solutions based on it to enable a truly rich and competitive retail market.

CONCLUSION

Near term, the CEA Proposal outlines a path forward to enable a retail market for interactive that supports OCAP and an OCAP alternative. Intel believes that OCAP is an important technology for advanced interactive services, and that an OCAP alternative is essential to a competitive retail market for interactive devices in light of the approaches advocated by both the CEA Proposal and the NCTA Proposal. Intel believes that the Commission should act quickly to enable that retail market as soon as possible to meet the DTV transition. Longer term, Intel believes that developing platform requirements that can support multiple services is in the best interests of consumers and that multi-service platforms will drive the greatest innovation and competition in the market place for both services and for devices. Intel recommends that the Commission therefore adopt both a short term plan to address the immediate needs to establish a competitive retail market in time for the DTV transition, and a longer term plan that seeks common platform requirements that can support multiple service offerings without compelling one competitor to use the proprietary technology of another.

Respectfully submitted,

INTEL CORPORATION

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